



Space Nutrition



Volume 1

Practice Makes Perfect

Issue #8

Mission Facts

We are at approximately Launch minus 60 days (L-60), with a projected launch date of July 19. During the month of May, the astronauts participating in the PhAB-4 experiments completed the L-60 data collection session. On the first day of the study session, the crew members took 2 calcium tracers - one by mouth, and the other by injection. We collected blood, urine, saliva and feces over 10 days to see where the tracers went. The astronauts also completed dietary intake monitoring.



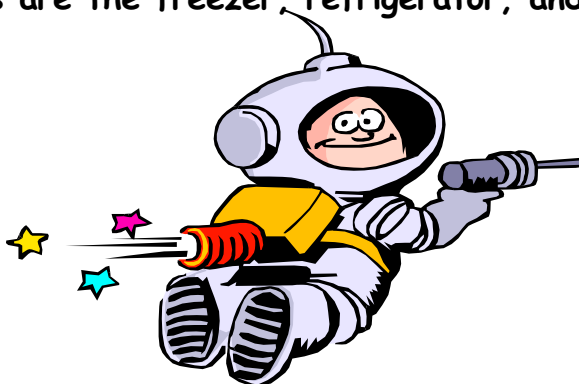
Career Facts

The crew trainers train the crew to do the procedures used in the STS-107 experiments. For the PhAB-4 experiments, the crew learned to use the centrifuge, freezer, refrigerator, and barcode reader. They also learned to inject the calcium and protein tracers. The trainer for equipment use is usually an engineer, while the trainer for blood collection and tracer injections is a medical technologist.

The STS-107 astronauts have received 3 general types of training:

- 1) Task training - collecting blood and operating the centrifuge and freezer, etc.
- 2) Integrated training - putting all of the individual tasks together, just as they would for the mission.
- 3) Simulations.

The simulations are the last step in crew training. In a simulation, the crew practices large sections of the flight timeline (anywhere from 6 hours to 36 hours). The simulations (called Joint Integrated Simulations, or JISs) are the most challenging training, because the trainers can simulate problems. The crew practices what to do if the power goes off, or if important equipment breaks down. Some of the most important equipment for the PhAB-4 experiments are the freezer, refrigerator, and centrifuge.



The JISs are designed to train the crew as well as the ground support personnel (experiment teams, engineers, flight control personnel). When equipment breaks, the ground support personnel have to quickly diagnose problems from what the crew radios down (or from data telemetered from the Shuttle). The people "on console" then relay the solution to the problems up to the crew. A breakdown often has wide impact, because if one experiment has a problem, and the timeline is affected, then other experiments will be affected as well. The crew and ground support personnel work through many (very many!) possible problems long before the mission, so that they can preserve the scientific value of as many experiments as possible.

Did you know?

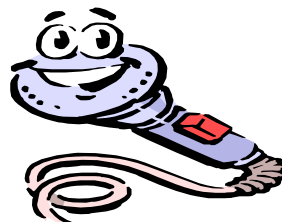
- Astronaut Peggy Whitson is the Principal Investigator of the renal experiment on STS-107, as well as the US crewmember for Expedition 5 to the International Space Station. She is scheduled to launch to the ISS on May 30, 2002.
- Supplements are pills or foods that people eat or drink to boost their intake of vitamins or minerals.
- You can get all the nutrients you need from a well-balanced diet.
- The Mission Control Center (MCC) is located in Houston at the Johnson Space Center.
- Only a few dozen people sit in the main MCC room. But hundreds more ground personnel sit in "back rooms" of the same building, listening on headsets to conversations taking place on orbit and on the ground.



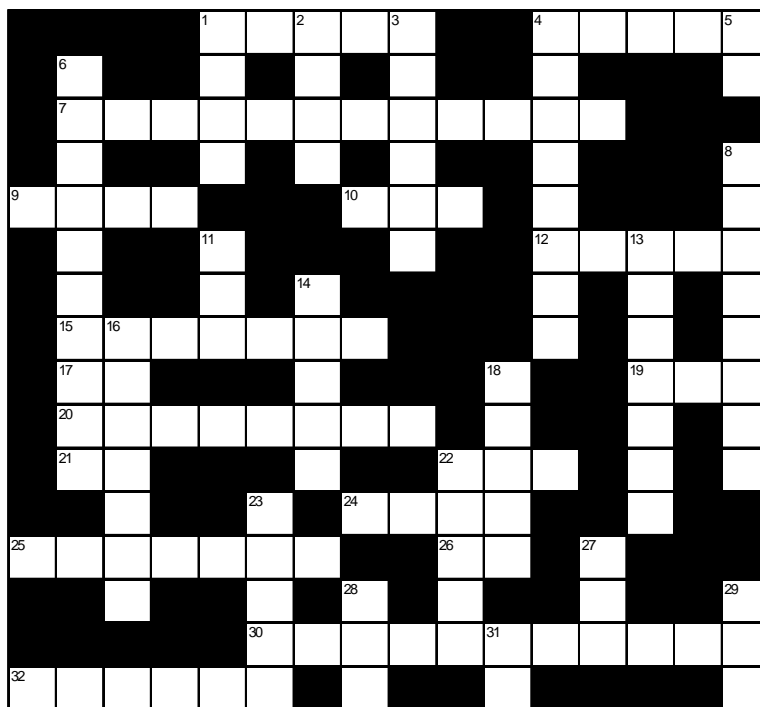
Word of the Month

Hormone

Can you guess what this word means? Look for the meaning of the "Word of the Month" in the next issue of Space Nutrition.



FUN CORNER "Mission Trivia" Crossword



Across

- 1 Another word for kidney
- 4 Astronaut Laurel _____
- 7 Astronaut vehicle
- 9 Interim Resistive Exercise Device
- 10 Urine Collection Device
- 12 _____ vessels
- 15 Space Flight is _____!
- 17 University of Houston
- 19 International Space Station
- 20 Crew schedule
- 21 ____S-107
- 22 Biomedical Engineer
- 24 __, 1, 2, 3
- 25 E-048
- 26 ____-orbit
- 30 Study of flight
- 32 Ilan's birthplace

Down

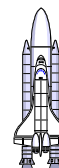
- 1 Astronaut _____ Husband
- 2 US Space Agency
- 3 Blast-off
- 4 E-381 will fly on the shuttle, _____
- 5 Initials of astronaut Kalpana Chawla
- 6 Space travelers
- 8 Astronaut Mike _____
- 11 Launch/Entry Suit
- 13 Atlantis is the name of an _____
- 14 Electronic letter
- 16 Expedition 5 astronaut
- 18 Astronaut Ilan _____
- 22 STS-107 astronaut with a colorful name
- 23 E-409
- 27 Willie McCool's 3-letter crew position
- 28 Flight Readiness Review
- 29 Kennedy Space Center
- 31 Advanced Technologies

Check out these cool NASA links for more fun space science facts:

<http://www.spaceflight.nasa.gov>

<http://virtualastronaut.jsc.nasa.gov>

<http://education.jsc.nasa.gov>



Check out the Nutritional Biochemistry Laboratory's website for more information about nutrition and space.

www.jsc.nasa.gov/sa/sd/facility/nutrition.htm